Microvascular Research

An International Journal

FOUNDING EDITORS
George P. Fulton David Shepro Benjamin Zweifach

EDITOR-IN-CHIEF
David Shepro

Volume 45

1993

ACADEMIC PRESS, INC.
Harcourt Brace & Company
San Diego New York Boston
London Sydney Tokyo Toronto

Copyright © 1993 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1993 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0026-2862/93 $5.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.

CONTENTS OF VOLUME 45

Number 1, January 1993

ANTAL G. HUDETZ. Percolation Phenomenon: The Effect of Capillary Network Rarefaction 1

CHRISTIAN C. BEALS, JOHN BULLOCK, ELENA R. JÁUREGUI, AND WALTER N. DURÁN. Microvascular Clearance of Macromolecules in Skeletal Muscle of Spontaneously Diabetic Rats 11

D. BACHIR, A. MAUREL, J. L. PORTOS, AND F. GALACTEROS. Comparative Evaluation of Laser Doppler Flux Metering, Bulbar Conjunctival Angioscopy, and Nail Fold Capillaroscopy in Sickle Cell Disease 20

BRIAN M. COOKE, SHUNICHI USAMI, IAN PERRY, AND GERARD B. NASH. A Simplified Method for Culture of Endothelial Cells and Analysis of Adhesion of Blood Cells under Conditions of Flow 33

LAWRENCE F. MUSCARELLA, ABHIJIT S. PATHAK, SHIRO TAKASHIMA, AND ABRAHAM NOORDERGRAAF. Quantitative Analysis of the Landis Method 46

M. L. BARTELINK, H. WOLLERSHEIM, R. W. M. M. JANSEN, A. THEEUWES, AND TH. THIEN. Reproducibility of the Finger Cooling Test 65

C. D. ECKHERT, M. K. LOCKWOOD, AND B. SHEN. Influence of Selenium on the Microvasculature of the Retina 74

MATTHEW A. BOEGEHOLD. Enhanced Arteriolar Vasomotion in Rats with Chronic Salt-Induced Hypertension 83

TECHNICAL REPORT

MIKLÓS PÁL, ANDRÁS TÓTH, C. H. WU, ROY A. TUCKER, AND PAUL C. JOHNSON. A Computer Controlled System for Multiple Site Microcirculatory Measurements 95

ANNOUNCEMENT 106

Number 2, March 1993

B. ROSEN AND W. PAFFHAUSEN. On-Line Measurement of Microvascular Diameter and Red Blood Cell Velocity by a Line-Scan CCD Image Sensor 107

M. S. DIETRICH AND M. STEINHAUSEN. With technical assistance by R. Dussel. Differential Reactivity of Cortical and Juxtamedullary Glomeruli to Adenosine-1 and Adenosine-2 Receptor Stimulation and Angiotensin-Converting Enzyme Inhibition 122

D. G. BUERK, R. D. SHONAT, C. E. RIVA, AND S. D. CRANSTOUN. O_2 Gradients and Countercurrent Exchange in the Cat Vitreous Humor near Retinal Arterioles and Venules 134

D. N. DAMON, M. KELLER, J. E. GRETZ, AND B. R. DULING. A Micropipette Which Allows *in Situ* Perfusion of Arterioles and Capillaries 149

Matthew R. Glucksberg and Robert Dunn. Direct Measurement of Retinal Microvascular Pressures in the Live, Anesthetized Cat 158

Christopher Slater and Steven D. House. Effects of Nonsteroidal Anti-inflammatory Drugs on Microvascular Dynamics 166

Gopal B. Avinash, Wayne S. Quirk, and Alfred L. Nuttall. Three-Dimensional Analysis of Contrast-Filled Microvessel Diameters 180

Joseph L. Unthank, Julia M. Lash, J. Craig Nixon, Richard A. Sidner, and H. Glenn Bohlen. Evaluation of Carbocyanine-Labeled Erythrocytes for Microvascular Measurements 193

Brief Communication

Harvey N. Mayrovitz and Mary Beth Regan. Gender Differences in Facial Skin Blood Perfusion during Basal and Heated Conditions Determined by Laser Doppler Flowmetry 211

Number 3, May 1993

Mohammad F. Kiani, Giles R. Cokelet, and Ingrid H. Sarelius. Effect of Diameter Variability along a Microvessel Segment on Pressure Drop 219

George Mchedlishvili, Leila Gobejishvili, and Nino Beritashvili. Effect of Intensified Red Blood Cell Aggregability on Arterial Pressure and Mesenteric Microcirculation 233

Jens Randel Nyengaard. The Quantitative Development of Glomerular Capillaries in Rats with Special Reference to Unbiased Stereological Estimates of Their Number and Sizes 243

S. L. Bernard, T. Obermiller, N. L. Polissar, J. M. Mendenhall, J. Butler, and S. Lakshminarayan. Fifteen Micrometer Microspheres Reflux Up the Pulmonary Veins during Pulmonary Artery Occlusion 262

Fan Yuan, Michael Leunig, David A. Berk, and Rakesh K. Jain. Microvascular Permeability of Albumin, Vascular Surface Area, and Vascular Volume Measured in Human Adenocarcinoma LS174T Using Dorsal Chamber in SCID Mice 269

Anthony M. Wheatley, Nicholas E. Almond, Edward T. Stuart, and Delai Zhao. Interpretation of the Laser Doppler Flow Signal from the Liver of the Rat 290

Hans-Jürgen Meuer and Claudia Bertram. Capillary Transit Times and Kinetics of Oxygenation in the Primary Respiratory Organ of Early Chick Embryo 302

Brief Communications

G. Caimi, A. Serra, R. Lo Presti, M. Montana, A. Catania, and A. Sarno. Red Cell Membrane Protein Lateral Mobility in Vascular Atherosclerotic Disease: Preliminary Report 314

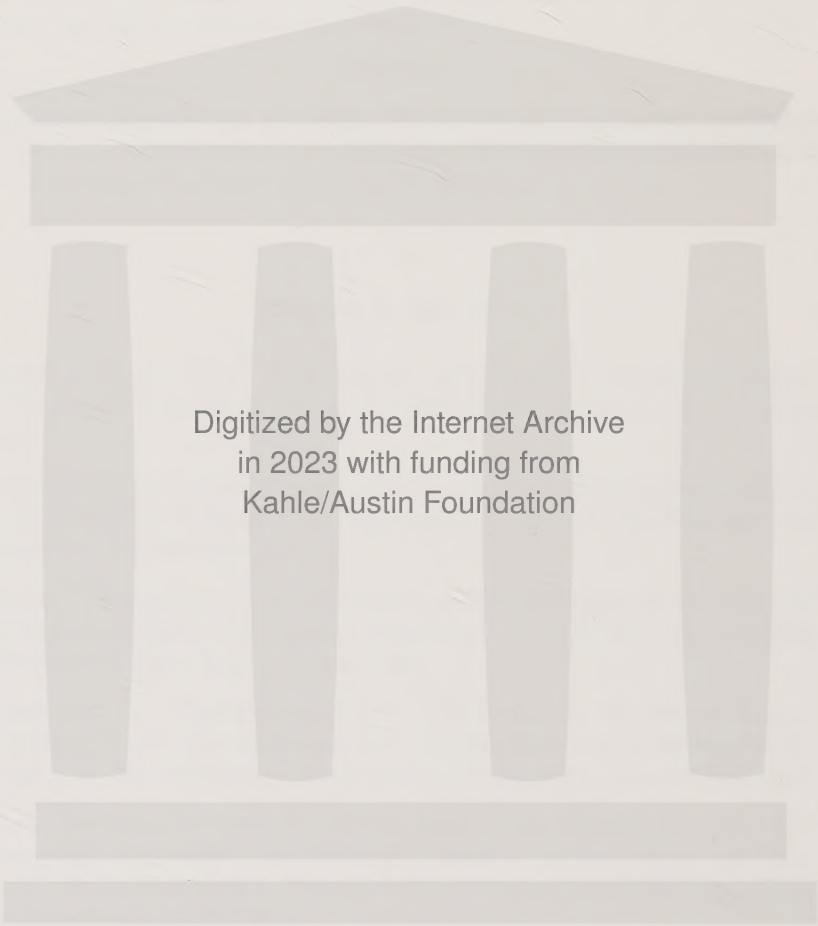
Ulrich Dirnagl, Ute Lindauer, and Arno Villringer. Nitric Oxide Synthase Blockade Enhances Vasomotion in the Cerebral Microcirculation of Anesthetized Rats 318

P. S. Scott, L. K. Vrba, and J. W. Wilks. A Simple Vessel for the Culture of Chicken Embryos Used in Angiogenesis Assays 324

Author Index for Volume 45 328

NOTICE

The Subject Index for Volume 45 will appear in the November 1993 issue as part of a cumulative index for the year 1993.



Digitized by the Internet Archive
in 2023 with funding from
Kahle/Austin Foundation

https://archive.org/details/microvascular-research_1993_45_contents

Information for Contributors

Microvascular Research (MVR) is an international journal dedicated to the dissemination of fundamental information related to the microvascular field.

Submission of Manuscripts. One original and two complete carbon copies should be sent via first-class mail, in flat form, to **Microvascular Research Editorial Office, Dr. David Shepro, 2 Cummington St., Boston University, Boston, Massachusetts 02215.** MVR will not be responsible for manuscripts lost in the mails.

Original papers only will be considered. Manuscripts are accepted for review with the understanding that the same work has not been and will not be nor is presently submitted elsewhere, and that its submission for publication has been approved by all of the authors and by the institution where the work was carried out; further, that any person cited as a source of personal communications has approved such citation. Written authorization may be required at the Editor's discretion. Articles and any other material published in *Microvascular Research* represent the opinions of the author(s) and should not be construed to reflect the opinions of the Editor(s) and the Publisher.

Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the Publisher. The Publisher will not refuse any reasonable request by the author for permission to reproduce any of his or her contributions to the journal.

Manuscript Style. Papers should be typewritten, double-spaced on one side of the paper, with wide margins. The manuscript should be divided into the following sections: Abstract, Introduction, Materials and Methods, Results, Discussion, References, and Acknowledgments. The abstract, which will precede each article, should be 225 words or less and should be typed on a separate sheet. In addition the manuscript should include, on separate pages, (1) the complete title with names of authors and affiliations (including ZIP CODE), (2) running title, consisting of no more than 40 characters including spaces, (3) key words that are suitable as **Index Descriptors,** and (4) the address to which proofs are to be mailed.

Tables. Tables are to be typed on separate sheets and numbered with Arabic numerals. Each table should contain an explanatory title that would make reference to the text unnecessary.

Figures. These should be numbered with Arabic numerals and should be mentioned consecutively in the text. Legends are to be typed together on a separate sheet.

Illustrations, drawn with a lettering set, should be in finished form ready for photographic reproduction. Lettering on the original drawing should be large enough (minimum, 4 mm) to be legible after reduction to one-third. Graphs should be plotted with black India ink on light blue coordinate paper, no larger than 8.5 × 11 inches, with coordinates properly labeled; grid lines that are to show in the photoreproduction should be inked in black.

Photographs should be submitted as glossy prints and not marred by staples, paper clips, or pencil marks. For best reproduction of halftones, provide clear, sharp photographs with adequate contrast. The best results will be obtained if authors match the contrast and density of all figures appearing on a single plate. If this is not possible, please provide unmounted original art. Providing an overlay that indicates the most critical areas of micrographs will also aid in ensuring high-quality reproduction. The dimensions of the printed page are 5 × 8 in. (127 × 203 mm). It is recommended that micrographs be submitted as near as possible to this size so that large reductions will not be necessary.

Illustrations in color can be accepted only if the authors defray the cost.

Footnotes. These should be designated in the *text* by superscript *numbers* and typed on a separate sheet; in the tables by superscript *letters* and typed at the bottom of the table.

Abbreviations. In general these should follow the usage employed by Chemical Abstracts. The *Style Manual,* 1986, of the American Chemical Society is also an acceptable guide.

References. Citations in the text consist of the author's name, and the year of publication in parentheses. The references should be listed alphabetically and should conform to the following style:

GRAYSON, J., AND LEVESON, M. (1985). Functional and morphological changes in the microcirculation of the dog following acute coronary artery ligation. *Microvasc. Res.* **29,** 161–175.

ALLEN, J. C., AND BUKOSKI, R. D. (1982). Current status of vascular smooth muscle subcellular calcium regulation. *In* "Vascular Smooth Muscle: Metabolic, Ionic, and Contractile Mechanisms" (M. F. Crass III and C. D. Barnes, Eds.), pp. 99–134. Academic Press, New York.

Abbreviations of journal names should follow the style of *Chemical Abstracts Service Source Index,* 1985. Unpublished observations and personal communications should be cited in the *text* as such.

Proofs. Proofs will be sent to the author with a reprint order form. Authors will be charged for alterations in excess of 10% of the cost of composition.

Reprints. Fifty reprints of each article (without covers) will be supplied free of charge. Additional reprints may be ordered. A reprint form will accompany the proofs.

Brief Communications. Preliminary reports will be reviewed for prompt publication; however, the comments must be restricted to no more than five typewritten pages, including references, tables, and illustrations. No abstract should be included.

Personal Computer Disks. Manuscripts may be submitted to *Microvascular Research* on personal computer disks after the manuscript has been accepted and after all revisions have been incorporated onto the disk. Label the disk with the type of computer used, the type of software and the version number, and the disk format. All tabular material will be typeset conventionally. Art must be prepared as camera-ready copy; see the section on Figures earlier in this Information for Authors.

A hard copy printout of the manuscript that exactly matches the disk file must be supplied. Academic Press will not accept disks without accompanying printouts of all files on the disk. File names must clearly indicate the content of each file. The manuscript will be edited according to the style of the journal, and the proofs must be read carefully by the author. Disks that are not translatable or economical to process will not be used. The publisher reserves the right not to use the disk.

For further information on preparing disks for typesetting conversion, please contact the publisher (Editorial Supervisor, Journal Division, Academic Press, Inc., 1250 Sixth Avenue, San Diego, California 92101; telephone: (619) 699-6415; fax: (619) 699-6800).

To facilitate the publication of manuscripts, especially those papers based upon a new, theoretical concept, the Editors invite each contributor to submit the names of at least three scientists who could review the submitted manuscript.